

EPA Region 5 Records Ctr.



353744

**FOCUSED SITE INSPECTION PRIORITIZATION
SITE EVALUATION REPORT**

**TEXACO, INC. SALES TERM 33 083
1253 W. WASHINGTON STREET
EAST PEORIA, ILLINOIS**

CERCLIS ID NO.: ILD042844456

Prepared for:

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SITE ASSESSMENT SECTION
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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION	1-1
2 SITE DESCRIPTION AND HISTORY	2-1
3 PREVIOUS INVESTIGATIONS	3-1
4 MIGRATION AND EXPOSURE PATHWAYS	4-1
4.1 GROUNDWATER MIGRATION PATHWAY	4-1
4.1.1 Geology and Soils	4-1
4.1.2 Groundwater Releases	4-2
4.1.3 Targets	4-3
4.2 SURFACE WATER MIGRATION PATHWAY	4-4
4.3 SOIL EXPOSURE PATHWAY	4-4
4.4 AIR MIGRATION PATHWAY	4-5
5 SUMMARY	5-1
6 REFERENCES	6-1
 <u>Appendix</u>	
A 1991 SCREENING SITE INSPECTION ANALYTICAL DATA . . .	A-1
B REFERENCE DOCUMENTATION	B-1

LIST OF FIGURES

Figure

2-1	Site Location Map	2-3
2-2	Site Features Map	2-4

1. INTRODUCTION

The Ecology and Environment, Inc., (E & E) Technical Assistance Team (TAT) was assigned by the United States Environmental Protection Agency (U.S. EPA), under Contract No. 68-W0-0037, Technical Direction Document (TDD) No. T05-9503-240, to evaluate the Texaco, Inc. Sales Term (TIST) 33 083 site in East Peoria, Tazewell County, Illinois. E & E performed Focused Site Inspection Prioritization (FSIP) activities to determine whether, or to what extent, the site poses a threat to human health and the environment.

This FSIP report presents the results of E & E's evaluation and summarizes the site conditions and targets pertinent to the migration and exposure pathways associated with the site. Background information was obtained from a Preliminary Assessment (PA) conducted by the Illinois Environmental Protection Agency (IEPA) in 1985, a Screening Site Inspection Report prepared by the E & E Field Investigation Team (FIT) in 1991, U.S. EPA files, IEPA files, and topographic maps of the surrounding area.

This report is organized into six sections, including this introduction. Section 2 describes the site and provides a brief site history. Section 3 provides information about previous investigations conducted at the site, and Section 4 provides information about the four migration and exposure pathways (groundwater migration, surface water migration, soil exposure, and air migration). Section 5 summarizes site conditions. References used to prepare this report are listed in Section 6.

2. SITE DESCRIPTION AND HISTORY

The TIST 33 083 site is located at 1253 West Washington Street, East Peoria, Tazewell County, Illinois (West 1/2 sec. 29, T. 26 N., R. 4 W.) (E & E 1991). The coordinates for the site are at latitude 40°41'30" north and longitude 89°35'30" west (IEPA 1985). The site is located just north of the junction of Farm Creek and the Illinois River. Figure 2-1 presents the site location.

The 4-acre TIST 33 083 site is located in the southeast corner of a larger parcel of property that the Caterpillar Tractor Company (Caterpillar) purchased including the TIST 33 083 site from Texaco, Inc. in 1980. The TIST 33 083 site is located in the southwestern portion of the property and is composed of nine former aboveground storage tank (AST) locations, labeled consecutively as Area No. 7 through Area No. 15, and the associated system of berms that surrounded the tanks. (The berms are intact.) The tanks were reportedly used from 1968 to 1988 to store diesel fuel, lubrication oil, hydraulic oil, and machine cutting oil, although a current site representative believes that Texaco, Inc., used the tanks solely for fuel storage (Anderson 1995). The Caterpillar Tractor company ceased using the tanks to store fuels and oil in July 1988, and they dismantled and removed the tanks in July 1989 (E & E 1991). The site is currently unused (Anderson 1995). The ground surface on site consisted of sandy soil that was fairly well vegetated during 1990 SSI field activities, and pieces of rubbish (glass, concrete, etc.) were observed throughout the site (E & E 1991).

The site is bordered to the west by the Illinois River, and Farm Creek is located approximately 60 feet south of the site (E & E 1991). The site is bordered to the north by an abandoned Caterpillar tank farm that was used to store petroleum. An open field and a building that Caterpillar formerly used as an office and warehouse is located off site in the northeast section of the larger Caterpillar property. Horizontal ASTs that are located southeast of the office/warehouse building were formerly used to store liquid petroleum hydrocarbons, but the tanks are empty and Caterpillar does not plan to use them again (Anderson 1995).

The Caterpillar property containing the TIST 33 083 site is located in an industrial area within the corporate boundaries of East Peoria, Illinois, which has a population of 21,378 persons (Rand McNally 1994). The property is entirely fenced and equipped with an alarm system to restrict access by the public (E & E 1991).

In May 1979, the administrator of the U.S. EPA Region 5 found the TIST 33 083 site to be in violation of the Clean Air Act, section 113 (a)(1) amended [42 U.S.C. sec. 7413 (a)(1)], specifically Illinois Rule 205, which addresses the control of volatile organic materials. The rule states that a storage or loading rack area must have a vapor collection and disposal system that is properly installed, in good working order, and in operation (U.S. EPA 1979). The TIST 33 083 site was allegedly not equipped with such a system, which resulted in the violation. File information does not indicate what action was performed as a result of this violation.

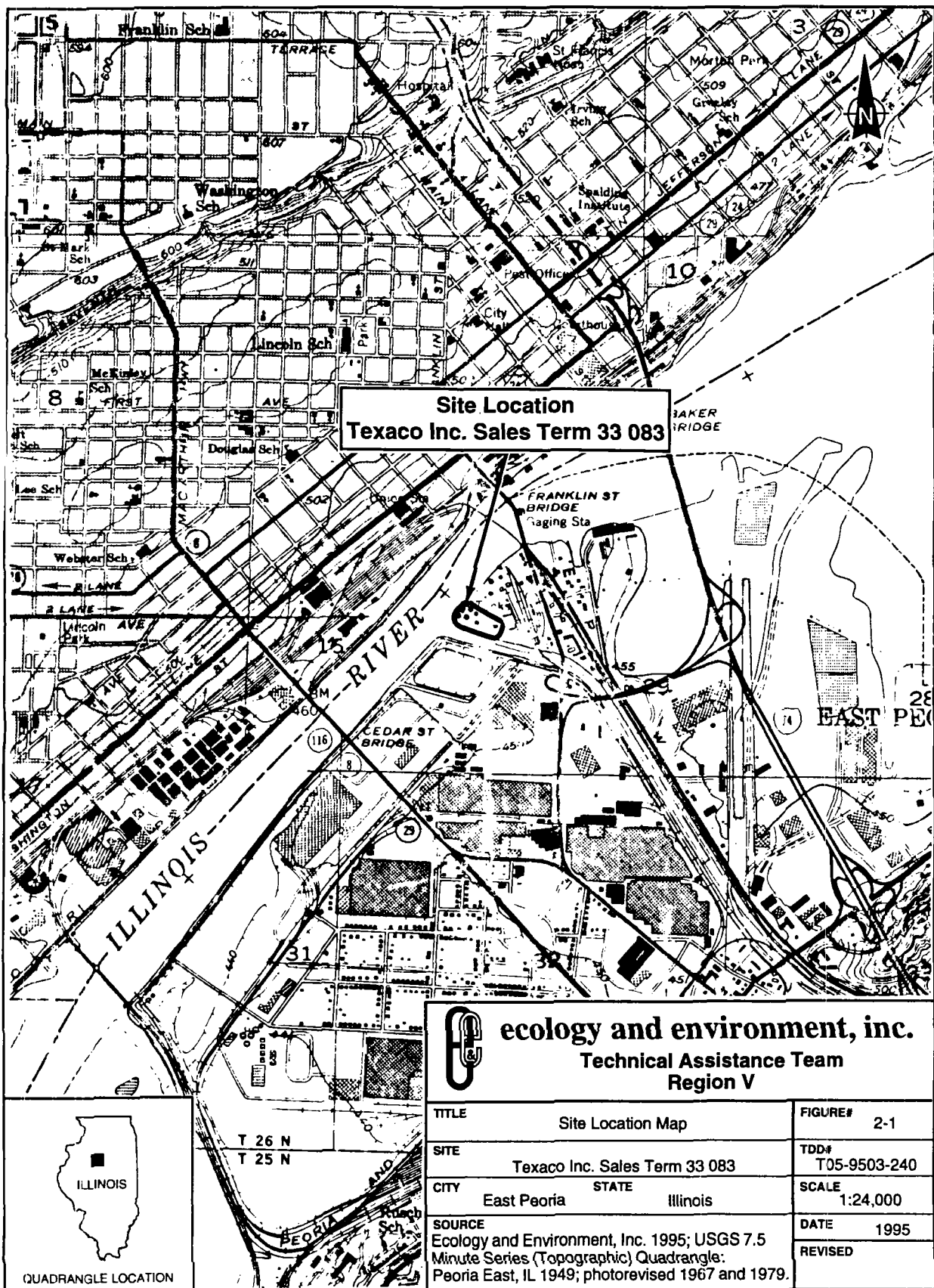
Caterpillar purchased the site as well as property to the north in September 1980. At the time of the sale, all tanks were emptied, inspected, and repaired (E & E 1991). In June 1981, Texaco, Inc., submitted a section 103(c) Notification of Hazardous Waste Site form to U.S. EPA Region 5, indicating that on-site disposal of leaded tank bottoms may have occurred during the time that Texaco, Inc., owned and operated the TIST 33 083 site (IEPA 1985).

The only on-site spill that Caterpillar officials are aware of occurred in 1986, when Caterpillar spilled approximately 4,000 gallons of diesel fuel in Area 12. Caterpillar personnel cleaned up the spill and were convinced the fuel did not reach the Illinois River. No regulatory agencies were notified (E & E 1991).

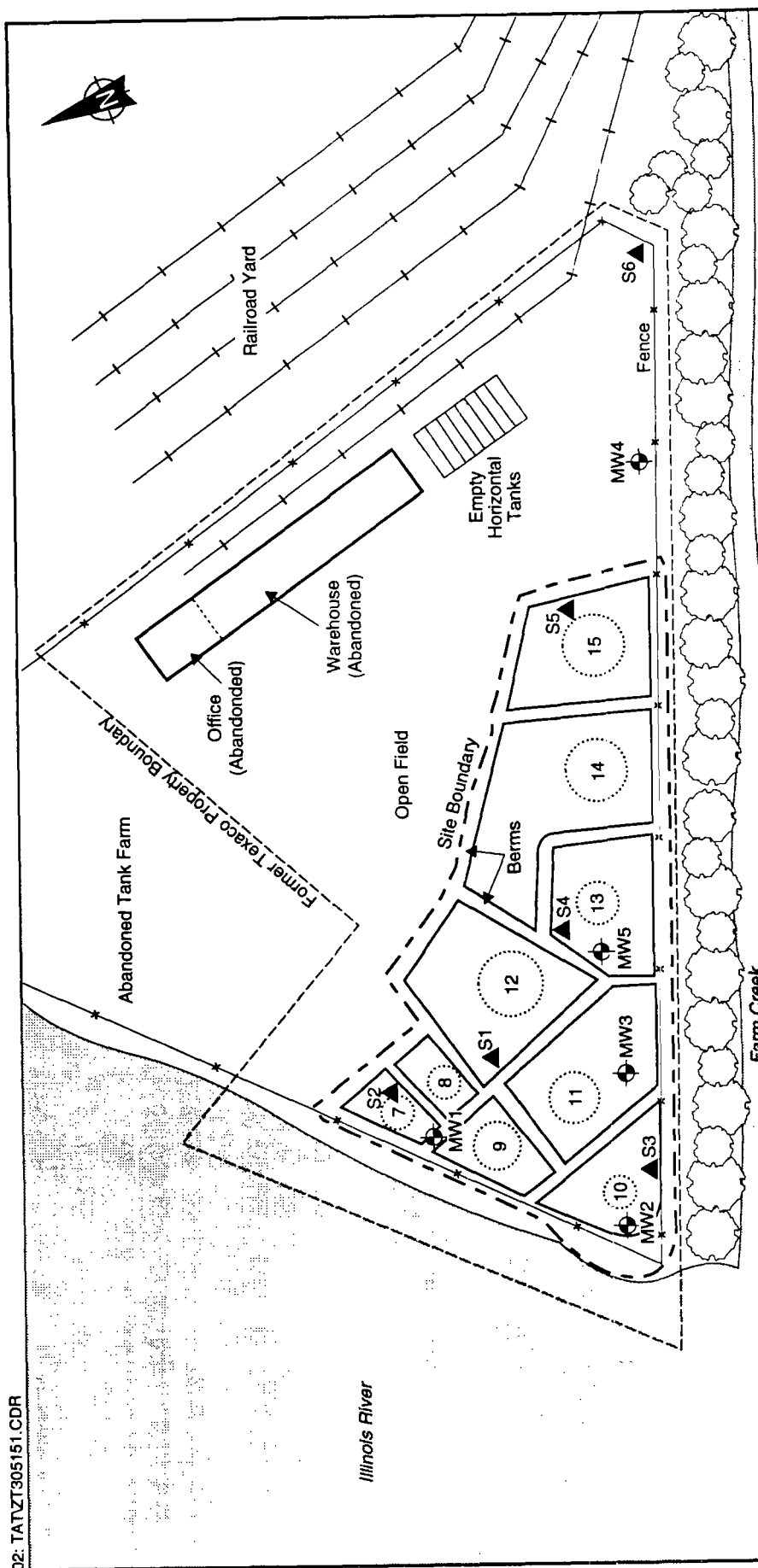
Sirrine Environmental Consultants installed five monitoring wells at the TIST 33 083 site in 1987 (E & E 1991). Information pertaining to the reason Sirrine Environmental Consultants was hired is not available in U.S. EPA files.

According to Caterpillar officials, the only permits associated with the site were a state air permit and a special waste-hauling permit. Caterpillar maintained waste-hauling permit No. 1790205031 to transport waste tank bottoms, fuel, and water off site to its main facility (E & E 1991).

The TIST 33 083 site was occupied from 1968-1989. It is currently inactive. Neither a Resource Conservation and Recovery Act (RCRA) permit nor a National Pollutant Discharge Elimination System (NPDES) permit was ever issued to the facility (Anderson 1995).



02: TATZT305151.CDR



ecology and environment, inc.
Technical Assistance Team
Region V

TITLE	FIGURE#
Site Features Map	2-2
SITE	TDD#
Texaco Inc. Sales Term 33 083	T05-9503-240
CITY	SCALE
East Peoria	Not to Scale
STATE	DATE
Illinois	1990
SOURCE	REVISED
Ecology and Environment, Inc. Screening Site Inspection Report, 1991	1995

Legend:

- Monitoring Well Location
- Soil Sample Location
- Trees
- Former Above Ground Tank Location

3. PREVIOUS INVESTIGATIONS

The TIST 33 083 site was initially discovered in May 1979, when the administrator for U.S. EPA Region 5 found the TIST 33 083 site to be in violation of the Clean Air Act, section 113 (a)(1) amended [42 U.S.C. sec. 7413 (a)(1)], specifically Illinois Rule 205, which addresses with the control of volatile organic materials. Rule 205 states that a storage or loading rack area must have a vapor collection and disposal system that is properly installed, in good working order, and in operation (U.S. EPA 1979). The TIST site was allegedly not equipped with such a system, which resulted in the violation report. Current file information does not indicate what actions were taken as a result of this violation.

Caterpillar purchased the property containing the TIST 33083 site in September 1980. On June 8, 1981, Texaco, Inc., submitted a section 103(c) Notification of Hazardous Waste Site Form to the U.S. EPA indicating that leaded tank bottoms may have been handled or disposed of on site sometime prior to its sale (IEPA 1985). A PA was prepared by Larry Winner of the IEPA in response to Texaco's submission (IEPA 1985). The PA recommended a low priority inspection designation for the site and stated that no hazardous wastes were stored at this Texaco facility.

SSI field activities were conducted on June 26, 1990, by the E & E Field Investigation Team (FIT) under TDD No. F05-8903-010, and the final SSI report was submitted to the U.S. EPA on September 4, 1991. Samples were collected by the E & E FIT at locations selected during the site reconnaissance to determine whether U.S. EPA Target Compound List (TCL) or Target Analyte List (TAL) constituents were present. Five on-site soil samples (S1 through S5) were collected, and off-site soil sample S6 was collected approximately 300 feet east-southeast of the site. Three on-site groundwater samples (MW1 through MW3) were collected, and off-site sample MW4 was collected approximately 100 feet east-southeast (upgradient) of the site as a background sample location. Location MW4 was selected as a background sample because it is the farthest upgradient sample location, and it is the only monitoring well installed outside of the containment berms that surround the former

fuel storage tank area (E & E 1991). SSI soil and groundwater sample locations are shown on Figure 2-2.

Soil samples S1 through S5 were collected at depths from 3 to 5 feet below ground surface (BGS) because a diesel fuel spill was known to have occurred on site and leaded tank bottoms may have been disposed of on site (E & E 1991). Sample S6 was collected as a potential background soil sample because the soil in the area appeared to be undisturbed (E & E 1991). However, the analytical results from soil sample S6 revealed some of the highest concentrations of TCL and TAL chemicals among the soil samples collected during the SSI. Therefore, an adequate background soil sample is not available for comparison. The primary TCL and TAL chemicals detected in S6 were polycyclic aromatic hydrocarbons (PAHs) and heavy metals. Based on the site features, potential sources of the TCL and TAL chemicals detected in S6 are the off-site horizontal liquid petroleum hydrocarbon storage tanks and the railroad tracks/railyard located approximately 50 feet northeast of sampling location S6.

Groundwater samples were collected from monitoring wells MW1 through MW4 to determine whether TCL and TAL chemicals were present in the groundwater in the vicinity of the site. On-site monitoring well MW5 was not sampled because E & E FIT believed that groundwater conditions in the site area could be adequately assessed based on results from the other four monitoring wells (E & E 1991). Monitoring well MW4 was selected as the upgradient (background) sample location because the direction of groundwater flow in the area is to the west, toward the Illinois River (E & E 1991). In addition, a duplicate sample was collected from MW2, and a field blank was submitted for laboratory analysis. As directed by the U.S. EPA, all samples were analyzed using the U.S. EPA Contract Laboratory Program (CLP).

All samples collected during the SSI in 1990 were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides/polychlorinated biphenyls (PCBs), metals, and cyanides according to the U.S. EPA Contract Laboratory Program (CLP). Analytical results for samples collected during the SSI are provided in Appendix A. Tentatively identified compounds (TICs) detected within soil sample S4 are included.

Analytical results for soil samples indicated the presence of SVOCs and TAL analytes at concentrations exceeding the naturally occurring background concentrations found in the urban soils of Illinois (IEPA 1994a), and at concentrations exceeding background concentrations of PAHs in urban soil (U.S. DHHS 1990).

VOCs were not detected in groundwater samples. Only iron was present in the on-site groundwater samples at concentrations greater than three times the background

concentrations detected in sample GW4, above the contract-required detection limit, above the Groundwater Quality Standards (GCS) for Class I Potable Resource Groundwater set forth in the Illinois Administrative Code, Title 35, subtitle F, Chapter I, section 620.410 dated September 30, 1994 (IEPA 1994b), and at concentrations greater than five times the concentration detected in the blank sample.

4. MIGRATION AND EXPOSURE PATHWAYS

This section describes the four migration and exposure pathways associated with the TIST 33 083 site. Section 4.1 discusses the groundwater migration pathway; Section 4.2 discusses the surface water migration pathway; Section 4.3 discusses the soil exposure pathway; and Section 4.4 discusses the air migration pathway.

4.1 GROUNDWATER MIGRATION PATHWAY

This section discusses the geology and soils, groundwater releases, and targets associated with the groundwater migration pathway at the site.

4.1.1 Geology and Soils

The geology in the area of the TIST 33 083 site is a combination of glacial outwash terrace deposits and glacial end moraine deposits. In the vicinity of the site, the outwash deposits of both the Farm Creek Valley and the larger Illinois River Valley are composed predominantly of sands, silts, and gravels deposited by Wisconsinan and Kansan glacial meltwaters (E & E 1991). Well logs from the SSI Report indicated that these unconsolidated deposits extend from the ground surface to depths of 40 to 90 feet BGS in the vicinity of the site. The unconsolidated surface deposits are underlain by a continuous layer of essentially impermeable Pennsylvanian shale (E & E 1991).

The areas to the north and south of the Farm Creek Valley increase sharply in elevation because of the presence of glacial end moraine material deposited by the retreating Wisconsinan ice sheet. These morainal deposits are composed predominantly of silty clay till with scattered lenses of sand and gravel. The thicknesses of these till deposits varies from 0 to approximately 200 feet. These deposits are also underlain by essentially impermeable Pennsylvanian shale (E & E 1991).

The aquifer under investigation is the unconfined sand and gravel deposits, which consist of the entire thickness of unconsolidated glacial material overlying the Pennsylvanian

shale. According to the SSI report, the depth to groundwater is approximately 7 feet BGS. Wells finished in the aquifer under investigation range in depth from approximately 40 feet to more than 200 feet BGS (E & E 1991).

A complete hydrogeologic investigation has not been conducted to establish the direction of groundwater flow beneath the site. Based the United States Geological Survey (USGS) topographic maps of the area and water levels recorded at on-site monitoring wells during the SSI, groundwater appears to flow westward (E & E 1991; USGS 1979a, 1979b, 1979c, 1979d).

4.1.2 Groundwater Releases

Based on current site conditions, a release of hazardous substances that are attributable to the TIST 33 083 site to the groundwater has not been confirmed. Four groundwater samples (MW1 through MW4) were collected for the 1991 SSI by E & E FIT.

No TCL compounds were detected in the groundwater samples collected from on-site monitoring wells or background well MW4, but TAL analytes were detected in monitoring well samples. Lead was detected in sample MW1 at a concentration of 13.1 $\mu\text{g/L}$, which is greater than three times the background concentration detected in sample MW4, and lead was also detected at 3.6 $\mu\text{g/L}$ in the field blank collected for quality control purposes. According to the U.S. EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, sample results greater than the instrument detection limit but less than five times the amount found in any blank should be qualified as undetected (U) (U.S. EPA 1994). Therefore, lead would be qualified as undetected in these samples.

Most substances detected in samples collected from wells MW1 through MW3 are present at concentrations comparable to those detected in the sample collected from well MW4. Furthermore, several of the TAL analytes detected are common constituents in the area substrate (IEPA 1994a). Iron was the only TAL analyte present in the on-site groundwater samples at concentrations greater than three times the background concentrations detected in sample GW4, exceeding the contract-required detection limit, and at concentrations greater than five times the concentration detected in the blank sample, and exceeding the Class I Potable Resource Groundwater set forth in the Illinois Administrative Code, Title 35, subtitle F, Chapter I, section 620.410 dated September 30, 1994 (IEPA 1994b). Iron was detected in samples collected from MW1 (6,660 $\mu\text{g/L}$), MW2 (8,390 $\mu\text{g/L}$), and MW2 duplicate samples (8,700 $\mu\text{g/L}$).

The potential exists for TCL and TAL chemicals detected in on-site soil samples detected during the 1991 E & E SSI to migrate into the groundwater in the vicinity of the site. This potential is based on the following analytical data:

- TAL analytes, copper and mercury, were detected in on-site soil samples at concentrations exceeding the range of naturally occurring inorganic chemicals in background soils in Illinois. Sample S5 contained mercury at a concentration of 206 mg/kg, and mercury at a concentration of 9.8 mg/kg (IEPA 1994a).
- Elevated levels of TCL compounds, primarily PAHs, were detected in soil sample S1. This sample was collected from within bermed area No. 12, the area in which 4,000 gallons of diesel fuel were spilled in 1986. PAHs are commonly found in petroleum products such as diesel fuel (E & E 1991).
- Elevated levels of TICs, primarily PAHs, were also detected in soil sample S4. This sample was collected from within bermed area No. 13, adjacent to the area in which the 1986 diesel fuel spill occurred.

In addition, the overburden beneath the site consists of relatively permeable unconsolidated sand and gravel, and the water table is situated approximately 7 to 9 feet BGS. No evidence of an engineered liner exists at the TIST 33 083 site.

4.1.3 Targets

The municipalities of East Peoria and Creve Coeur, located on the east side of the Illinois River and within 4 miles of the TIST 33 083 site, receive drinking water from supply wells that obtain water from the aquifer under investigation. The population west of the Illinois River is not considered a target population for potential groundwater contamination because the Illinois River is topographically the lowest area in the vicinity of the site and functions as a groundwater discharge area.

The Illinois River is approximately 13 feet deep adjacent to the site and does not completely bisect the shallow unconsolidated deposits that constitute the aquifer under investigation. However, based on the Illinois River's size, elevation, and the humid climate, the Illinois River would form a groundwater flow boundary, towards which the groundwater in the shallow unconfined aquifer on both sides of the river will flow (Fetter 1988).

The municipal water system of East Peoria serves 22,500 persons, and the municipal water system of Creve Coeur serve approximately 6,851 persons (E & E 1991). In addition, the Morton municipal water system of Morton, located approximately 4.5 miles southeast of

the site, serves approximately 14,800 persons. This system is connected with the East Peoria system to allow for the exchange of water in case of an emergency (E & E 1991).

The nearest municipal well is located approximately 2.1 miles southeast of the TIST 33 083 site, and the nearest private well is located approximately 2.5 miles southeast of the site (E & E 1991; USGS 1979a). Both wells are located within the East Peoria water district. The total population on the east side of the Illinois River and within 4 miles of the site that would potentially be affected by migration of chemicals to groundwater is approximately 26,951 persons, approximately 100 of which obtain water from private wells (E & E 1991). Although approximately 2,500 additional persons reside in the municipalities of East Peoria and Creve Coeur, they are served by nine municipal wells that are located more than 4 miles from the site.

4.2 SURFACE WATER MIGRATION PATHWAY

Based on current site conditions, a release to surface water has not been confirmed. No overland surface water pathways were observed during E & E's 1991 SSI, and the berms prevent surface runoff from the former tank farm area (E & E 1991). In addition, no TCL chemicals (VOCs) were detected in the groundwater samples, and the PAHs that were detected in the on-site soil samples are relatively immobile.

A potential exists for the TCL and TAL chemicals detected in on-site soil samples to migrate to both nearby surface water bodies. As previously stated, the Illinois River is topographically the lowest area in the vicinity of the site, and therefore, it functions as a groundwater discharge area. Based on the Illinois River's size, elevation, and the humid climate, the Illinois River would form a groundwater flow boundary, towards which the groundwater in the shallow unconfined aquifer on both sides of the river will flow (Fetter 1988). No surface water samples were collected during the SSI in 1990.

The nearest surface water bodies are Farm Creek and the Illinois River, which are located along the southern and western boundaries of the site, respectively, and both are used for recreation (E & E 1991). No drinking water intakes are known to exist within 15 miles downstream of the site (E & E 1991; USGS 1979a, 1979b, 1979c). The site is not known to be located within the 500-year floodplain of either the Illinois River or Farm Creek.

Numerous small wetlands (less than 5 acres) are known to exist along the banks of the Illinois River within 15 miles downstream of the TIST 33 083 site (USDI 1988a, 1988b, and 1988c), and several species of threatened or endangered plants and animals are known to exist in Tazewell County (Herkert 1994). None of the wetlands or endangered species would

be adversely affected by the TIST 33 083 site based on the absence of any on-site, overland surface water migration pathways, and the presence of the containment berms.

4.3 SOIL EXPOSURE PATHWAY

Based on current site conditions, a release of hazardous substances from the TIST 33 083 site to surrounding soils has not been confirmed.

Soil samples S1 through S5 were collected from depths of 3 and 5 feet BGS because a diesel fuel spill occurred on site and leaded tank bottoms may have been disposed of on site (E & E 1991). TCL/TAL substances and TICs were detected in on-site samples. Sample S5 contained copper (206 mg/kg) and mercury (9.8 mg/kg) at concentrations above the range of naturally occurring inorganic chemicals in background soils in Illinois (IEPA 1994). Elevated levels of TCL compounds, primarily PAHs, were detected in soil sample S1, which was collected from the area in which approximately 4,000 gallons of diesel fuel were spilled in 1986. (PAHs are commonly found in petroleum products such as diesel fuel.) (E & E 1991). Elevated levels of TICs, primarily PAHs, were also detected in soil sample S4, which was collected from within the bermed area adjacent to the 1986 fuel spill.

Sample S6 was collected as a potential background soil sample because the soil in the area appeared to be undisturbed (E & E 1991). However, the analytical results from soil sample S6 revealed some of the highest concentrations of TCL and TAL chemicals among the soil samples collected during the SSI. Therefore, an adequate background soil sample is not available for comparison. The primary TCL and TAL chemicals detected in S6 were PAHs and heavy metals. Based on the site features, potential sources of the TCL and TAL chemicals detected in S6 are the off-site horizontal liquid petroleum hydrocarbon storage tanks and the railroad tracks/yard located approximately 50 feet to the north and east of the S6.

According to federal, state, and local file information reviewed by E & E FIT, observations made during the SSI, and the interview conducted with representatives of the Caterpillar Tractor Company during the SSI in 1990, no incidents of direct contact with TCL or TAL chemicals at the site have been documented (E & E 1991). A potential does not exist for the public to come into direct contact with TCL or TAL chemicals detected in the on-site soils because the site is completely fenced and equipped with an alarm system (E & E 1991). The site is inactive and there are no workers to come in contact with the site soils (Anderson 1995).

Based on straight-line distance, no schools, daycare centers, or private residences are located within 200 feet of the site. The nearest private residence is located approximately 1,600 feet northwest of the site (USGS 1979c, 1979d). Several species of threatened or

endangered plants and animals are known to exist in Tazewell County (Herkert 1994). However, none of the threatened or endangered species would be adversely affected by the TIST 33 083 site due to the lack of significant VOCs contamination on-site and the industrial nature of the area surrounding the site.

4.4 AIR MIGRATION PATHWAY

Based on the current site conditions a release of hazardous substances from the TIST 33 083 site to air has not been confirmed. No releases have been documented (IEPA 1985), and no complaints of odors by the surrounding residents are currently on file with the IEPA or the U.S. EPA. Although no air samples were collected for analysis, E & E FIT site-entry instruments (OVA 128, explosimeter, radiation monitor, and hydrogen cyanide monitor) did not detect levels above background concentrations (E & E 1991).

The site is fairly well vegetated, and the lack of significant VOC contamination on site would reduce the potential for substances to migrate off site via the air route. However, the potential for TCL and TAL chemicals detected in the surface soil sample collected off-site (S6) to migrate via windblown particulates does exist. A total of approximately 144,000 persons reside within a 4-mile radius of the site.

5. SUMMARY

E & E has evaluated the Texaco, Inc. Sales Term 33 083 site using the existing IEPA and U.S. EPA files, various state information services, and personal communications with Mr. Randy Anderson, an Environmental Engineer for Caterpillar. The TIST 33 083 site has been an inactive petroleum product storage facility about 1989 (E & E 1991). From 1968 to 1988, both Texaco, Inc., and Caterpillar used the site to store diesel fuel, lubricating oil, hydraulic oil, and machine cutting oil.

The TIST 33 083 site is located on a larger property owned by Texaco, Inc. The approximately 4-acre site previously contained nine aboveground storage tanks, each of which was located in an area enclosed by a containment berm. Caterpillar purchased the site and adjacent property in September 1980. At the time of the sale, all of the storage tanks were emptied, inspected, and repaired. Caterpillar used the tanks to store diesel fuel, as well as lubrication oil, hydraulic oil, and machine cutting oil (E & E 1991). Caterpillar ceased using the tanks for the storage of fuels and oil in July 1988. The tanks were dismantled and removed in July 1989 (E & E 1991).

The only on-site spill that Caterpillar officials are aware of occurred in 1986, when Caterpillar spilled approximately 4,000 gallons of diesel fuel in storage tank area No. 12. Caterpillar personnel cleaned up the spill and were convinced the fuel did not reach the Illinois River. No regulatory agencies were notified (E & E 1991).

Previous investigations at the site have included a PA conducted in 1985 by the IEPA, and an SSI conducted by E & E FIT in 1990. During the SSI, FIT collected five on-site soil samples, one off-site soil sample, three on-site groundwater samples, and one off-site groundwater sample. The soil and groundwater sample locations are shown on Figure 2-2, and analytical results are shown in Appendix A.

Based on site conditions a release of hazardous substances from the TIST 33 083 site to groundwater has not been confirmed. No TCL compounds were detected in the groundwater samples collected during E & E's 1991 SSI, but TAL analytes were detected in

four monitoring well samples (MW1 through MW4). Iron was detected in the sample collected from MW1 (6,660 $\mu\text{g/L}$), MW2 (8,390 $\mu\text{g/L}$), and the duplicate sample collected from MW2 (8,700 $\mu\text{g/L}$). Most substances detected in downgradient wells MW1 through MW3 were present in concentrations comparable to those detected in the upgradient sample MW4. Furthermore, several of the TAL analytes detected are common constituents in the area's substrate (IEPA 1994).

The potential exists for the TCL and TAL chemicals detected in SSI soil samples to migrate to groundwater in the vicinity of the site. Soil sample S5 contained copper (206 mg/kg) and mercury (9.8 mg/kg).

The municipalities of East Peoria and Creve Coeur, located on the east side of the Illinois River and within 4 miles of the site, receive drinking water from supply wells that obtain water from the aquifer under investigation. The nearest municipal well is located approximately 2.1 miles southeast of the site, and the nearest private well is located approximately 2.5 miles southeast of the site (E & E 1991; USGS 1979a). Both wells are located within the East Peoria water district. The total population located on the east side of the Illinois River and within 4 miles radius of the site that could potentially be affected by migration of TCL or TAL chemicals to groundwater is approximately 26,951 persons. Of this population, approximately 100 persons obtain water from private wells (E & E 1991).

Based on current site conditions a release to surface water has not been documented, as no overland surface water pathways were observed during the 1990 SSI, and the on-site berms would prevent any surface runoff from the former tank farm area from leaving the site (E & E 1991). In addition, no TCL chemicals (VOCs) were detected in the groundwater samples, and the PAHs that were detected in the on-site soil samples tend to be relatively immobile. However, based on topography, a potential exists for the TCL and TAL chemicals detected in on-site soil samples to migrate to these surface water bodies.

No surface water or sediment samples were collected during the SSI in 1990. The nearest surface water bodies to the site are Farm Creek and the Illinois River, located along the southern and western boundaries of the site, respectively. Both Farm Creek and the Illinois River are used for recreation (E & E 1991). No drinking water intakes are known to exist within 15 miles downstream of the site (E & E 1991; USGS 1979a, 1979b, 1979c). The site is not known to be located within the 500-year floodplain of either the Illinois River or Farm Creek, although the facility is bordered by these water bodies.

Based on current site conditions a release of hazardous substances from the TIST 33 083 site to surrounding soils has not been confirmed. No incidents of direct contact with TCL or TAL chemicals at the site have been documented (E & E 1991), and there are no

workers at this inactive site (Anderson 1995). The site is completely fenced and equipped with an alarm system (E & E 1991). The nearest private residence is located approximately 1,600 feet northwest of the site (USGS 1979c, 1979d). No schools, daycare centers, or private residences are located within 200 feet of the site.

On-site soil samples S1 through S5 were collected during the 1991 E & E FIT SSI because a diesel fuel spill was known to have occurred on site and leaded tank bottoms may have been disposed of on site (E & E 1991). Two TAL analytes, copper (206 mg/kg) and mercury (9.8 mg/kg), were detected in sample S5 at concentrations exceeding the range of naturally occurring inorganic chemicals in background soils in Illinois (IEPA 1994).

Soil sample S1 was collected from bermed area No. 12, the area in which approximately 4,000 gallons of diesel fuel were spilled in 1986. Elevated levels of TCL compounds, primarily PAHs, were detected in the sample (E & E 1991). PAHs are commonly found in petroleum products such as diesel fuel. Elevated levels of TICs, primarily PAHs, were also detected in soil sample S4. This sample was collected from within bermed area No. 13, the area adjacent to the 1986 diesel fuel spill.

Based on the current site conditions, a release of hazardous substances to air is unlikely to have occurred at the TIST 33 083 site. No air samples were collected for analysis during the 1991 SSI sample event, but E & E FIT site-entry instruments (OVA 128, explosimeter, radiation monitor, and hydrogen cyanide monitor) did not detect levels above background concentrations (E & E 1991). No records of complaints or odors by the surrounding residents are currently on file with the IEPA or the U.S. EPA. However, the potential for TCL and TAL chemicals detected in the surface soil sample collected off site (S6) to migrate via windblown particulates exists.

Numerous small wetlands (less than 5-acres) are known to exist within a 4 mile radius of the site and within 15 miles downstream along the Illinois River (USDI 1988a, 1988b, 1988c). In addition, several species of threatened or endangered plants and animals are known to exist in Tazewell County (Herkert 1994). However, none of the wetlands or endangered species would be adversely affected by the TIST 33 083 site because no hazardous waste storage or releases on site have been documented (IEPA 1985), no overland surface water migration routes were observed during the SSI, the site is completely surrounded by both containment berms and fencing, and no complaints of odors by the surrounding residents are currently on file with the IEPA or the U.S. EPA.

6. REFERENCES

References included in this list, but not included in Appendix B: documents that are currently available within U.S. EPA files; copyrighted documents that are currently available in E & E's library; maps produced by either the United States Geological Survey or the Illinois State Geological Survey; and documents that are created by the various state agencies for public use.

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_____, 1979d, 7.5 minute series (topographic) quadrangle, Peoria West, Illinois.

APPENDIX A

1991 SCREENING SITE INSPECTION ANALYTICAL DATA

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL SAMPLES

Sample Collection Information and Parameters	Sample Number					
	S1	S2	S3	S4	S5	S6
Date	6/26/90	6/26/90	6/26/90	6/26/90	6/26/90	6/26/90
Time	1140	1210	1345	1505	1610	1645
CLP Organic Traffic Report Number	ELQ92	ELQ93	ELQ94	ELQ95	ELQ96	ELQ97
CLP Inorganic Traffic Report Number	MELD82	MELD83	MELD84	MELD85	MELD86	MELD87
<u>Compound Detected</u> (values in $\mu\text{g/kg}$)						
<u>Volatile Organics</u>						
methylene chloride	—	—	—	—	45J	—
carbon disulfide	2J	—	—	—	—	—
toluene	2J	—	—	—	2J	—
<u>Semivolatile Organics</u>						
naphthalene	—	—	—	—	62J	—
2-methylnaphthalene	59J	—	—	79J	62J	—
acenaphthene	50J	—	—	—	—	—
dibenzofuran	45J	—	—	—	—	—
fluorene	62J	—	—	—	—	—
phenanthrene	720	—	—	—	—	120J
anthracene	150J	—	—	—	—	—
di-n-butylphthalate	910	94J	91J	—	—	52J
fluoranthene	1,400	—	42J	—	—	370
pyrene	1,000	—	41J	—	—	280J
benzo[a]anthracene	1,000	—	—	—	—	430
chrysene	990	—	—	—	—	230J
bis(2-ethylhexyl)phthalate	—	—	—	—	41J	47J
benzo[b]fluoranthene	740	—	—	—	—	430X
benzo[k]fluoranthene	670	—	—	—	—	430X
benzo[a]pyrene	870	—	—	—	—	210J
indeno[1,2,3-cd]pyrene	420	—	—	—	—	180J

Table 4-1 (Cont.)

Sample Collection Information and Parameters	Sample Number					
	S1	S2	S3	S4	S5	S6
dibenzo[a,h]anthracene	250J	—	—	—	—	58J
benzo[g,h,i]perylene	410	—	—	—	—	210J
<u>TICs†</u>						
undecane, 4, 7-dimethyl- (17301-32-5)	—	—	—	2,400J	—	—
tridecane, 2-methyl- (1560-96-9)	—	—	—	1,300J	—	—
dodecane, 2, 6, 10-trimethyl- (3891-98-3)	—	—	—	1,500J	—	—
heptadecane, 2-6-dimethyl- (54105-67-8)	—	—	—	7,500J	—	—
octadecane (593-45-3)	—	—	—	5,000J	—	—
iron, tricarbonyl[n-(phenyl)]- (74764-11-7)	—	—	—	3,400J	—	—
pentacosane (629-99-2)	—	—	—	2,000J	—	—
<u>Analyte Detected</u> (values in mg/kg)						
aluminum	2,170	813	1,090	3,360	2,130	4,930
arsenic	7.1	3.2	3.6	4.3	10.2	8.3
barium	94.5NJ	11.2BNJ	15.8BNJ	41.1NJ	59.9NJ	51.3NJ
beryllium	0.38B	—	—	0.22B	0.32B	0.39B
cadmium	4	1.1	—	—	2.8	—
calcium	30,900	31,900	38,500	50,500	39,800	39,600
chromium	13.9	2.9	4.8	10.1	9.3	13.2
cobalt	4.1B	2.6B	2.7B	5.4B	4.2B	6.3B
copper	49.6	8	7.4	12.9	206	19.9
iron	16,900	4,040	5,540	13,000	12,100	12,000
lead	348*J	23.2*J	116*J	45*J	339*J	55.6*J
magnesium	11,300*J	15,000*J	13,900*J	24,100*J	19,300*J	16,600*J

Table 4-1 (Cont.)

Sample Collection Information and Parameters	Sample Number					
	S1	S2	S3	S4	S5	S6
manganese	319N*J	173N*J	233N*J	438N*J	285N*J	376N*J
mercury	0.3	—	—	—	9.8	0.15
nickel	9	—	6.4B	9.2	9.6	12.5
potassium	—	—	—	176B	—	519B
silver	1.7B	—	—	1.2B	1.5B	0.89B
sodium	196BJ	113BJ	122BJ	214BJ	190BJ	162BJ
thallium	0.69BNWJ	0.49BNWJ	—	0.47BNWJ	0.2BNWJ	0.39BNWJ
vanadium	8.2B	4B	5.3B	11.9	8.1B	12
zinc	427E*J	41.8E*J	42E*J	76.6E*J	286E*J	112E*J

— Not detected.

† TIC Chemical Abstracts Service (CAS) number, if available, are provided in parentheses.

Table 4-1 (Cont.)

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.
X	Coelution of compounds.	Denotes compounds that coelute as in distinguishable isomers.
ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semiquantitative.
*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be quantitative or semiquantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semiquantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED MONITORING WELL SAMPLES

Sample Collection Information and Parameters	<u>Sample Number</u>					
	MW1	MW2	Duplicate	MW3	MW4	Blank
Date	6/26/90	6/26/90	6/26/90	6/26/90	6/26/90	6/26/90
Time	1445	1600	1600	1700	1730	1630
CLP Organic Traffic Report Number	ELR94	ELR95	ELQ98	ELR96	ELQ99	ELR97
CLP Inorganic Traffic Report Number	MELD89	MELD90	MELD93	MELD91	MELD94	MELD92
Temperature (°C)	25	23	23	23	20	30
Specific Conductivity ($\mu\text{mhos/cm}$)	625	850	850	430	1,100	1
pH	6.83	6.67	6.67	6.84	6.72	5.97
<u>Analyte Detected</u> <u>(values in $\mu\text{g/L}$)</u>						
aluminum	97.8BJ	174BJ	133BJ	168BJ	71.7BJ	280
antimony	—	25.7B	—	—	—	—
arsenic	8.5B	2.4B	2B	—	1.2B	—
barium	150B	145B	153B	92.6B	86.8B	—
calcium	268,000	295,000	315,000	84,100	307,000	553B
iron	6,660	8,390	8,700	629J	1,010J	268
lead	13.1J	1.8BWJ	1.8BWJ	5.9J	2.4BWJ	3.6
magnesium	21,700	32,900	35,200	16,000	30,800	—
manganese	847	1,020	1,080	492	1,800	5.1B
potassium	17,300	18,500	20,000	5,150	17,700	—
selenium	3.3MWJ	—	—	3.1MWJ	—	—
sodium	26,800	19,400	20,600	17,800	31,300	627BJ
thallium	1.3BJ	1BJ	2.7BJ	3.1BJ	1.3BJ	—
vanadium	—	—	2.5B	—	—	—
zinc	22J	68.5J	41.5J	26.2J	118J	26.9J

— Not detected.

Table 4-2 (Cont.)

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.

APPENDIX B

REFERENCE MATERIALS

PHONE CONVERSATION RECORD

Conversation with:

Name Mr. Randy Anderson (Environmental Eng.)

Date 8. 7. 95

Time 11:15

AM PM

Company Caterpillar Tractor Company

Address East Peoria, Ill

☒ Originator Placed Call

☐ Originator Received Call

Phone 309-675-2377 1000

Subject Current status of Former Texaco Inc. Sales Term. 33083.
currently owned by Caterpillar

Notes: I called Mr. Randy Anderson and the
following information was provided.

- No changes to the property have occurred
since the 1991 SSI.
- The property currently is not used for anything.
- Nothing is stored on the property.
- The Horizontal fuel storage tanks adjacent to the
office/warehouse are currently empty and there is
no plans to use them in the future.
- The site has no RCRA / NYPDES Permits
- No employees currently work on site

☒ File _____

Follow-Up-Action: _____

☐ Tickle File _____

☐ Follow-Up By: _____

☐ Copy/Route To: _____